U.S. Department of the Interior
Bureau of Land Management

Environmental Assessment

DOI-BLM-NV-S010–2010–0018–EA

October 2010

Castle Mountain Wind Energy Amendment 1

APPLICANT

Oak Creek Energy Systems, Inc.

GENERAL LOCATION

Near Searchlight, Nevada

BLM Case File Serial Number

N-82729/01

PREPARING OFFICE

U.S. Department of the Interior
Bureau of Land Management
Southern Nevada District Office
Las Vegas Field Office
4701 N. Torrey Pines Drive
Las Vegas, Nevada 89130
702–515–5172
702–515–5155

BLM

Introduction
ROW Amendment for Oak Creek Energy System (N-82729)

In August 2006, Oak Creek Energy Systems (OCES) submitted to the Bureau of Land Management (BLM) a SF-299 application for a Site Type II right-of-way (ROW) for wind resource monitoring & testing pursuant to 43 CFR 2800 regulations and in accordance with Instruction Memorandum No. 2009-043. BLM completed all the National Environmental Policy Act (NEPA) compliance requirements documented in a 2008 Environmental Assessment (EA) 2007-249. BLM approved a total of nine (9) met towers in February 2009 with terms and conditions. The ROW expiration date is December 31, 2011. OCES installed 5 met towers in March 2009 in accordance with the ROW grant stipulations. Data collected in the first few months indicated that further data collection was warranted.

In August 2009, OCES submitted an amendment to the initial 2006 application proposing to relocate two (2) of the previously–approved (but not yet installed) met tower sites to a more accessible terrain. Two of the sites that were initially chosen, NV-06 and NV-07, were not adequate for OCES needs. These sites were shadowed by hills which blocked the wind or there is no reasonable road access.

The objective of the project is to amend the existing ROW grant that would allow OCES:

- to move anemometer tower sites NV-06 and NV-07 to new locations as ALT NV-06 and ALT NV-07
- to change the height of ALT NV-07 to 120m (394 feet)
- to add Sonic Detection And Ranging (SODAR) units at each location

The use of Sonic Detection and Ranging (Sodar) to gather wind data and validate and compliment wind data collected from met towers has become more viable within recent years. The Sodar unit can be used in many cases to collect bankable data up to 200 meters (656 feet) above ground level.

This EA analyzes three alternatives, the proposed action, the alternative action, and the No Action Alternative. This amendment would terminate with the existing ROW on December 31, 2011.

Identifying Information:

Title, EA number, and type of project:

Oak Creek Energy Systems (OCES)

DOI-BLM-NV-S010-2010-0018-EA

To Amend Existing ROW Grant N-82729

Location of Proposed Action:

West of Searchlight, NV and north of Crescent Peak, within Clark County, NV

Met Tower Site ALT 6: T. 28 S., R. 61 E., Sec. 03: SW1/4 (within) 35.531054 -115.139525

Met Tower Site ALT 7: T. 28 S., R. 62 E., Sec. 18: SW1/4 (within) 35.50399 -115.093978

Name and Location of Preparing Office:

Las Vegas Field Office LLNVS00560

BUREAU OF LAND MANAGEMENT, Southern Nevada District Office, Las Vegas Field Office, 4701 N. Torrey Pines Drive, Las Vegas, NV 89130

Identify the subject function code, lease, serial, or case file number:

Case file number N-82729

Applicant Name:

Ed Duggan, Executive Vice President
Oak Creek Energy Systems, Inc.
150 La Terraza Blvd.
Escondido, CA 92025
(760) 975–0910 ext 208

Purpose and Need for Action:

The need for the Agency's action stems from BLM's administrative responsibility for managing public resources and the requirement to meet regulatory and legislative mandates outlined by the National Energy Policy Act of 2005.

The purpose of this EA is to determine whether the BLM should amend an existing ROW grant N-82729.

Scoping, Public Involvement and Issues:

The original ROW grant was scoped and published for a 30–day public review period on the BLM web-site, dated January 15, 2009. The proposed project was reviewed and scoped by a team of BLM resource specialists in the Las Vegas Field Office, and the Renewable Energy Project Team staff member between May 15, 2010 and August 6, 2010. The Environmental Assessment (EA) and the unsigned Finding of No Significant Impact (FONSI) will be available for public comment period on the BLM's Southern Nevada District web-site and interested parties will be notified of the opportunity to comment. The comment period will be from October 19, 2010 to November 3, 2010.

Comments will be used to help inform BLM's decision on the proposed ROW amendment.

The BLM will make a decision whether or not to issue the proposed amendment for ALT NV-06 and ALT NV-07.

Three resources has been identified as potential issues in this EA and will require mitigation measures:

(1.) Threatened or Endangered Species; Endangered Species Act of 1983, as amended (16 USC 1531); Section 6

(2.) Visual Resource Management; BLM Handbook H 8410–1, Visual Resource Inventory (BLM 1986a)

(3.) Vegetation and Forestry; Healthy Forests Restoration Act of 2003 (P.L. 108-148)

Proposed Action and Alternatives

Description of the Proposed Action:

This EA analyzes three alternatives, the proposed action, the alternative action, and the No Action Alternative.

Proposed Action: The proposed alternative would keep the met towers height at 60-meters (197 feet) as addressed in 2007-249 EA, for the approved 9 met towers except ALT NV-07 the tower size would increase to a height of 120-meters (394 feet). Additionally, two (10' X 10') SODAR units would be added to the footprint, and transported to site and fenced. There are four remaining met tower locations that have been constructed, including the proposed action met tower locations of ALT NV-06 and ALT NV-07. If this alternative is selected, this would allow for eight (8) met towers at 60-meters height and one (1) met tower at 120-meters height and two (2) sodar units for the entire project area.

Additionally ALT NV-07 must conform to FAA lighting requirements. A Determination of No Hazard to Air Navigation was solicited by OCES. FAA assigned OCES' permit request case number ASN 2010-WTW-7928-OE. The FAA has issued a **Determination of No Hazard to Air Navigation** for the proposed project on July 9, 2010. The Determination of No Hazard to Air Navigation provided that OCES follow the lighting and marking requirements identified by the FAA and as identified in Chapter 4 of this EA.

Alternative B: This alternative would limit all tower heights to 60-meters (197 feet) and add two (10' X 10') SODAR units ALT NV-06 and ALT NV-07 and address location changes. Access to the site would be via a BLM designated route of travel by marking posted with the BLM route number and RS-2477 road A68M as depicted on the Met Tower ALT-7 Map.

No Action: The no action alternative for this application would be to not approve the application. The applicant would use the original approved BLM ROW grant issued on February 25, 2009, which includes the installation of nine (9) met towers.

Alternatives Considered but not Analyzed in Detail

None

What Will Be Installed on Public Lands

Proposed Action:

OCES propose to relocate two (2) of the existing approved met locations known as NV–06 and NV–07 to ALT NV–06 and ALT NV–07. OCES proposes to install a 60-meter (197 feet) guyed or self-supporting tower at the ALT NV–06 location and a 120–meter (394 feet) guyed design at the ALT NV-07 location. A sodar unit will be installed at each met tower location. Each Sodar unit will occupy a 10' x 10' fenced area and will be located at least one times the tower height from the nearby met tower and within the tower foot print. These units will be situated within the biological and cultural surveyed areas. Access to the site would be via a marked BLM designated route of travel, that is also a RS-2477 road designated as A68M as depicted on the Met Tower ALT-7 Map.

Alternative B:

OCES would be limited to tower heights of 60-meters (197 feet) and add two (10' X 10') SODAR units ALT NV-06 and ALT NV-07. Each Sodar unit will occupy a 10' x 10' fenced area and will

be located at least one times the tower height from the nearby met tower and within the tower foot print. These units will be situated within the biological and cultural surveyed areas. Access to the site would be via a marked BLM designated route of travel, that is also a RS-2477 road designated as A68M as depicted on the Met Tower ALT-7 Map.

No Action:

The no action alternative for this application would be to not approve the application.

Table 1. NV-ALT–06 Disturbed Area

NV-ALT06	**New** Disturbed Area
Sodar Unit # 2	100 sq. ft.
Tower Base	80 sq. ft.
Guy Anchors	800 sq. ft.
Access Path	400 sq. ft.
Total New Disturbed Area	1380 sq. ft.
Total Acres Disturbed	0.03 Acres

Table 2. NV-ALT–07 Disturbed Area

NV-ALT07	**New** Disturbed Area
Sodar Unit # 2	100 sq. ft.
Tower Base	80 sq. ft.
Guy Anchors	800 sq. ft.
Access Path	2800 sq. ft.
Total New Disturbed Area	3780 sq. ft.
Total Acres Disturbed	0.09 Acres

Grand Total of Newly Disturbed Area is 0.12 Acres

Secondary Access will parallel Highway 164 onto an existing road that is approximately 4. 7 miles from Searchlight, Nevada in T. 28 S., R. 62 E., Section 18.

Access Road

Access is required to ALT NV–06

within SE¼SW¼, Section 03, T. 28 S., R. 61 E. would begin from a common intersecting point approximately 14.6 miles from Searchlight, Nevada along Highway 164 at a point where the highway and a dirt road intersect. This road intersection with Highway 164 is further described with a sharp 40º reverse angle back to the northeast near the center point of Section 21, T. 28 S., R. 61 E. Once on this 10 foot wide well maintained electric power line road which was approved by BLM for the Boulder Canyon Project. Continuing along this road in a northeasterly direction through Sections 16, 15, into the NE¼ of Section 10 for approximately 2.4 miles, thence, turning northwesterly continuing along said road for approximately 1.10 miles to the location where the met tower will be installed on the northeast side of the road. The primary access to this site will be a well maintained dirt road which is a ROW (NVCC-20959) approved in perpetuity since 1942 for a 200’ wide transmission line and access road extending for a distance of over 51 miles. This road is well maintained and easily traveled with any equipment required to install the type of met towers requested under this amendment. In Section 10, the primary access road intersects with an additional road that is also well maintained and appears to have been a service road for

the ROW along with several other secondary ROW paralleling NVCC-20959 through the area which includes N–66156 and NVCC-18586.

Castle Mountain North
Proposed Met Tower Location #6
Oak Creek Energy Systems, Inc.
Legend
Photo Locations
Met Tower
NV-06 #2
GPS Roads
Designation
BLM Designated Route
Dirt Road (well traveled)
Walk In
BLM Designated Route
Map Detail
Drawn By: Chris White
Checked By:
Date: November 16, 2009
Sheet No.
0 0.25 0.5 1 1.5 2 Miles
OAK CREEK ENERGY

The primary installation access to ALT NV–07

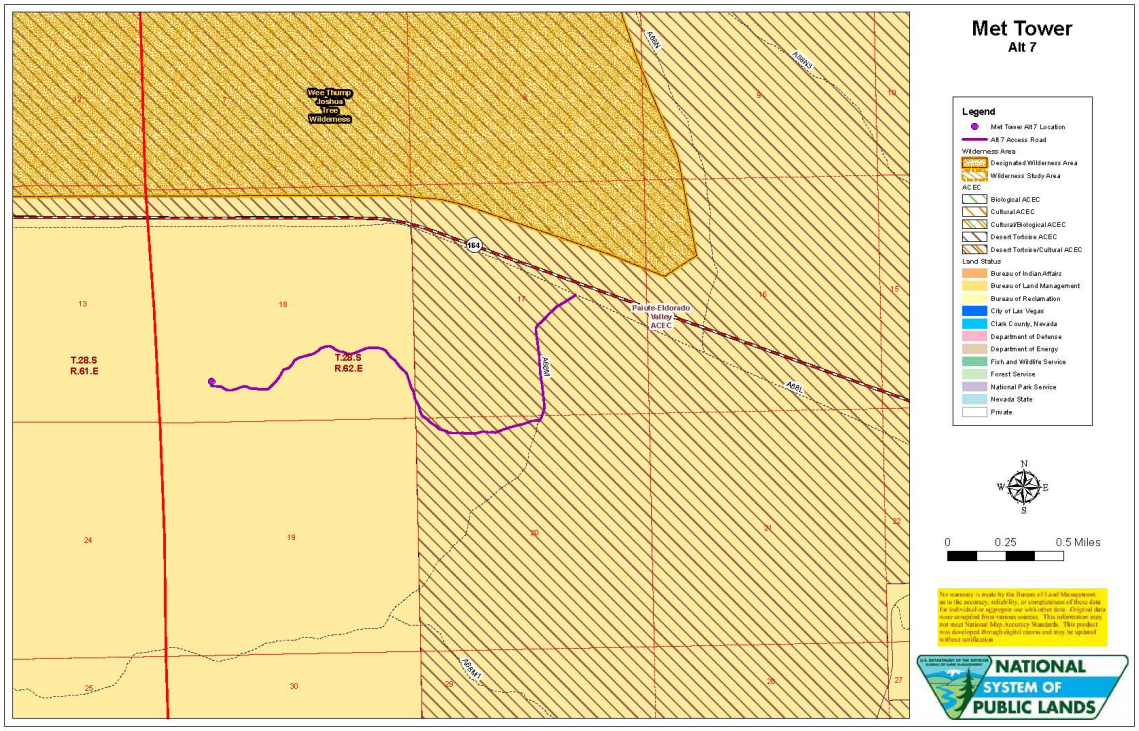
within Section 18, T. 28 S., R. 62 E. would begin from a common intersecting point approximately 8.8 miles from Searchlight, Nevada along Highway 164 at a point where the highway and a dirt road intersect. This location point is within the SW1/4NE1/4 of Section 17, T. 28 S. R. 62 E. at a point in the road where a wide point in the shoulder of the road exists that would allow for staging the installation process or setting up a vehicle car pooling process if need be, which will be the beginning point (BP) of this description.

From the BP of this description, proceeding south within the South Piute Valley ACEC along a 12' wide designated road number A68M for approximately 150' ; thence, turning south-southeasterly continuing along said road approximately 600'; thence, turning 60º south-southwesterly approximately .2 miles; thence, turning south continuing along said road for approximately 0.4 miles to a point on the section the common section line between Sections 17 and 20; thence, turning west onto a non-designated road within the Eldorado/Piute Valley Area of Critical Environmental Concern (ACEC) and continuing along said road for approximately 0.58 miles at which point the road exits the ACEC; continuing west outside of the ACEC for approximately 1.1 additional miles to a point within Section that has been cleared for installation of met towers.

Approximate Road Length within ACEC is .58 miles x 12' wide.

Approximate Road Length outside ACEC 1.090 miles x 12' wide.

Because of steep hills the best and most safe access route to ALT NV-07 would be through the ACEC area and on to the closed BLM designated road. This access point will be one time usage for CONSTRUCTION ONLY. Upon completion of construction, portions of the .58 mile long closed access road to ALT NV–07 (which extends from the designated route within the ACEC to the point at which that road exits the ACEC) would be reclaimed by roughing/ripping the western and eastern end of the closed road for 500' from either end of that closed segment of road. This would be done utilizing a tooth-ripper attached to a bulldozer. This "roughing" and "ripping" technique would make the road rough enough to make it clear that the road is closed, to discourage usage of the road by off-road motorized activities, and would allow natural revegtation to occur. In addition, rock barriers and/or signs could be constructed at either end of the closed segment of road if BLM. The newly .12 miles disturbed access site shall be by drive and crush and return to park along the existing BLM designated road.



MITIGATION STATEMENTS All operations will be conducted as outlined and approved in the EA, POD, and the ROW grant. The area from the met tower to the access road that has been disturbed will be hand raked to remove all sign of tire tracks. The berm of the road will be re-established to maintain original drainage pattern while minimizing other users from going off road at these entry points. Additionally, available natural ground debris will be scattered within the first 25 ' from the access point across the fresh raked areas. Since access to remove the towers at a later date is required, large barriers will not be placed in these areas unless required by the BLM during decommissioning of the site.

NV-7 #1
35.50399
-115.09378
Photo 1
Photo 2
Photo 3
Photo 4
Photo 5
Photo 6
Photo 7
Legend
Photo Locations
Met Tower
NV-7 Alt 1
GPS Roads
Designation
BLM Designated Route
Dirt Road (well traveled)
Gated
Walk In
0
0.125
0.25
0.5
0.75
1
Miles
Castle Mountain North
Proposed Met Tower Location #7
Oak Creek Energy Systems, Inc.
Map Detail
Drawn By:
Chris White
Checked By:
Date:
November 19, 2009
Sheet No.
OAK CREEK ENERGY SYSTEMS

Installation

The met tower POD describes a lattice-guyed wire design which for most practical purposes has what OCES believes to contain enough similarities for all typical 60– meter (197 feet) tilt-up guy wire installation processes. The Mast is tilted up from the ground to a vertical position using a 12–meter (40 feet) gin pole and six sets of lifting wires. Therefore, OCES is providing only the Advanced Mast erection procedures as an example of typical installation regardless of whether it is a lattice or monopole guyed wire design. Siting of the final tower configuration will determine if the monopole design will be used.

If non-guy wired towers are determined to be the best type of met tower for the region, OCES will need to cement the Mast into the ground for stability. Regardless of which design is used, OCES will place an 8 foot high fence around the towers. This fence will need to have a top strand of razor wire to prevent climbing over and accessing the met tower and its equipment. Each guy wire location will each have a smaller fence placed around the points where they come in contact with the ground.

60-meter (197 feet) Advanced Mast Tilt-Up Tower

OCES uses the Advanced Tilt-Up Mast System temporary four-legged lattice guyed meteorological towers on most job sites due to their stability in high wind and inclement weather conditions. Regardless of the height of the tower, the basic installation process is the same. A descriptive power point presentation has been provided with the POD giving a visual concept of the tower installation process.

Using the Advanced Mast System 60-meter (197 feet) Tower as the descriptive model for the purposes of this POD, the 60 meter (197 feet) Tower kit includes all components and fasteners required to assemble the Mast. The lightweight design, sturdy galvanized steel tube construction, and guy wire locations make the Mast Towers both reliable in extreme weather conditions but portable for easy transportation to remote sites. This is the basic installation set up for a non-climbing tower. Climbing towers need to use concrete base plate foundations and concrete reinforced guy-wire anchor points.

With a typical installation without cement reinforcement allows for the Mast to be guyed in four directions at 90-degree increments from each leg of the lattice structure. The 60–meter (197 feet) Mast has six guy level points at 9–meter (30 feet) vertical spacing which provides for greater stability after installation. The Mast is tilted up from the ground to a vertical position using a 12–meter (40 feet) gin pole and six sets of lifting wires. The installation kit includes a lower hinged base plate, upper hinged base plate, pre-measured guy wires on spools, screw-in anchors, and all necessary hardware to complete the installation.

Typical installation involves the most minimal tools necessary to complete the job. This includes several 4 x 4 trucks within the area carrying tools parts and supplies. The primary installation vehicle will be one 4 x 4 with a 9 ton winch mounted on the front bumper. The winch is required in lifting the weight of the 60–meter (197 feet) tilt-up tower. A base plate, anchors and anchor wires along with the tower parts required to assemble and install the met tower typically are the type's only equipment up on site. All remaining equipment will be staged on the access road.

Anchoring

Due to the varying soil types anchors may need to be proof tested to the load required before the installation to insure the proper anchors and anchor foundations are used. Testing of the anchor

site would be accomplished by auguring in an anchor at a test site location in the immediate proximity to the installation site then use a winch, extended jack or come-along to place lifting and raised torque strain on the anchor to determine its load management. This would be further tested with a professionally calibrated dynamometer to verify the test data. If the test data proves the soil is insufficient, either more anchors can be installed or concrete footers at the anchor points would be used.

The hand bar installation begins with the anchor going into the ground turning clockwise in a straight up and down position for the first couple full turns, then after the anchor has dug into the soil it is pushed into the proper angle to complete the installation. Based on the composition of desert soils, these types of anchors are typically sufficient. These anchors are 66" in length and can be buried up to 60" below the ground for maximum stability and control.

In the event the soil composition does not allow for this type of installation, the most common alternative anchoring system is to place a site-built concrete anchors. In this circumstance a hole must be dug at the anchor points using a back-hoe. Reinforcing steel is placed in the hole with a screw in anchor tied to the reinforced steel with the rod and eye in the proper angle above ground to attach the guys. Concrete is then poured over the ground leaving approximately 12 inches between the cement and the ground surface for native soil backfill. All remaining soils would either be scattered around the site or removed per BLM's instructions.

Depending on the site, location, and potential for loss due to theft or vandalism, OCES will place fence around the met tower itself to minimize the loss of the equipment. Since each tower and data logger is valued at approximately $30,000.00, plus installation costs. The capital investment of approximately $300,000 along with the remote conditions will dictate this level of security.

Maintenance and Monitoring

The purpose of the met towers is to get wind data year round on a 24hr/365day schedule. The continuous year-round operations allows for passive collecting and recording wind information that will be downloaded at the site manually on a monthly basis with a handheld data logger.

Fencing

By regulations the sign will state: Name Holder, Grant Number and Contact Phone. The actual footprint is a square with dimensions measuring 20 ' X 20 ' = 400 square feet area enclosed by the 8 ' chain link fence. Razor wiring will only be designed on the top perimeter of the fence for security of the public and equipment. Final fencing standards will conform to the local BLM office requirements to cell phone and communication towers site fencing.

OCES will place an 8 ' high fence around the tower base. In the case of the unguyed towers, the fence would have a single coil of razor wire to prevent climbing over and accessing the met tower and its equipment. A cyclone fence would be installed around the base of each met tower. This is to prevent access to the tower's for climbing, as well as protect the tower's data logger, anemometers and other sensitive weather and scientific data gathering and storage equipment The fence will have a coil of razor wire integrated long the upper 10 inches of the cyclone fence and extending approximately 18 inches above that has a stop—gap prevention method for illegal access into the site. This type of razor wire is consistent within remote locations though—out the eleven western states.

Decommissioning

These met towers will be taken down in the same manner as installed. OCES will protect the resources in order to prevent any undue degradation to the area and the resources, restoring the area to as close to the original condition as possible. This will be completed prior to the term of the grant if a Type III development is not pursued.

Conformance

The proposed action is in conformance with the Las Vegas Resource Management Plan (RMP), Record of Decision, (ROD), signed October 5, 1998. This action is consistent with the terms and conditions and decisions of the approved plan in the following Land Use Plan decision (s):

Right of Way Management
Objective

> **RW-1**. Meet public demand and reduce impacts to sensitive resources by providing an orderly system of development for transportation, including legal access to private in holdings, communications, flood control, major utility transmission lines, and related facilities.
> Management Direction
>
> **RW-1-h.** All public lands within the planning area, except as stated in RW-1-c through RW-1-g, are available at the discretion of the agency for right-of-way under the authority of the Federal Lands Policy Management Act.

The proposed action is in conformance with the Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States dated December 12, 2005; The Wind Energy Development Policy IM-2009-043 dated December 19, 2008.

Affected Environment:

Supplemental Authorities

Table 3. Supplemental Authorities To Be Considered

Element	Authority	Manual Section
Air Quality	The Clean Air Act as amended (42 USC 7401 et seq.)	7300
Cultural Resources	National Historic Preservation Act, as amended (16 USC 470)	8100
Fish Habitat	Magnuson-Stevens Act Provision: Essential Fish Habitat (EFH): Final Rule (50 CFR Part 600; 67 FR 2376, January 17, 2002).	NA
Forests and Rangelands	Healthy Forests Restoration Act of 2003 (P.L. 108-148)	NA
Migratory Birds	Migratory Bird Treaty Act of 1918, as amended (16 USC 703 et seq.)	NA
Native American Religious Concerns	American Indian Religious Freedom Act of 1978 (42 USC 1996)	8100
Threatened or Endangered Species	Endangered Species Act of 1983, as amended (16 USC 1531)	6840
Wastes, Hazardous or Solid	Resource Conservation and Recovery Act of 1976 (43 USC 6901 et seq.) Comprehensive Environmental Repose Compensation, and Liability Act of 1980, as amended (43 USC 9615)	9180 9183
Water Quality Drinking–Ground	Safe Drinking Water Act, as amended (43 USC 300f et seq.) Clean Water Act of 1977 (33 USC 1251 et seq.)	7240 9184
Wild and Scenic Rivers	Wild and Scenic Rivers Act, as amended (16 USC 1271)	8014
Wilderness	Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq.); Wilderness Act of 1964 (16 USC 1131 et seq.)	8500
Environmental Justice	E.O. 12898, "Environmental Justice" February 11, 1994	NA
Floodplain	E.O. 11988, as amended, Floodplain Management, 5/24/77	7260
Migratory Birds	E.O. 131186, “Responsibilities of Federal Agencies to Protect Migratory Birds” January 10, 2001	NA
Wetlands-Riparian Zones	E.O. 11990 Protection of Wetlands 5/24/77	6740

Resource Analyses

Resources of the human environment that have been considered for this EA are listed in the table below. Elements that may be affected are further described in the EA. Rationale for those elements that would not be affected by the proposed action and alternative are listed in the table below.

Supplemental Authority	Not Present	Present Not Affected	Present/May be Affected	Rationale
Air Quality		X		Project site location is subject to Department of Air quality and Environmental Management dust control regulations. The DAQEM has been delegated the authority, under the provisions of Nevada Revised Statute 445B.500 and by direction of the Clark County Board of County Commissioners, to implement and enforce an air pollution control program in Clark County, Nevada. DAQEM applies and enforces the Air Quality Regulations, which establish requirements for sources who emit or release air contaminants into the atmosphere. An approved Dust Control Permit must be obtained before soil is disturbed. A Dust Control Permit is required for projects with the following dimensions: Soil-disturbing or construction projects greater than or equal to 0.25 acres; Trenching projects greater than or equal to 100 feet in length; or Mechanical demolition of any structure larger than or equal to 1,000

				square feet. Permittees and contractors are responsible for controlling dust on their projects 24 hours a day, 7 days a week; there are no exceptions. A Supplement to the Dust Mitigation Plan is required for soil disturbing or construction projects 10 acre or larger in size, trenching activities one (1) mile or more in length and structural demolition using implosive or explosive techniques. Any construction project having more than 50 acres of actively disturbed soil at any given time is required to have a Dust Control Monitor as described in Section 94.7.5.
Area of Critical Environmental Concern (ACEC)		X		The proposed action will be utilizing an existing closed road that crosses the Piute-Eldorado ACEC and is designated desert tortoise critical habitat. As proposed, there will be no new surface disturbance associated with the proposed action within the Piute-Eldorado ACEC and there for no impacts. Additionally following use of this road for construction purposes, the proponent has proposed to roughen the road and place rock barriers and/or signs to discourage future usage of this

				closed road through the ACEC. If any construction activities are to be located in the above listed area, then additional stipulations or possibly informal/formal consultation will be required.
Cultural Historical	X			The area of potential effect for both tower locations and their access route has been inventoried and documented in BLM Cultural Resource Report No. 5–2646. No cultural resources were noted, thus none will be affected by this project. No further evaluation is required.
Environmental Justice	X			Project is located in an isolated, non-populated area where no minority or low-income communities are present, therefore no Environmental Justice issues will occur.
Farmlands Prime or Unique	X			Proposed action does not occur in prime or unique farmland.
Floodplains	X			The proposed sites are not located within floodplains. However, the disturbance associated with the site may increase erosion on site, increasing sediment loads downstream, thereby impacting the associated floodplains. Ensure bmps are utilized to reduce sedimentation and erosion impacts.

Noxious Weeds/ Invasive Non-native Species		X		Impacts from construction and maintenance may introduce and exacerbate weed populations, with potential spread to adjacent lands. All standard stipulations and mitigation measures applies regarding equipment and personnel leaving site are free of soil and vegetation to prevent introduction and transportation of weeds.
Migratory Birds			X	See EA language below.
Native American Religious Concerns	X			No Native American religious values have been identified in the project locales. The two anemometer towers would be temporary structures alongside existing roads.
Forest and Rangelands (HFRA)		X		There should be minimal new disturbance associated with this project.
Riparian/Wetlands	X			There are no known wetland or riparian zones in the proposed locales.
Human Health and Safety		X		Areas will be fenced to prevent access by public and must be in compliance with FAA regulations.
Threatened, Endangered and Special Status Plant Species	X			Not Present.

Threatened, Endangered and Special Status Animal Species			X	Desert tortoise, May Affect — See Section 3.2.3
Waste — Hazardous/ Solid	X			Not Present
Water Quality (Drinking , Ground, Surface)		X		The disturbance associated with the site may increase erosion on site, thereby increasing sediment loads in surface runoff. This could result in the degradation of surface water quality. Additionally, the construction and operation of the Sodar units may involve dredging or filling of Waters of the U.S., which would require the cooperation of the U.S. Army Corps of Engineers. Ensure applicant complies with the Clean Water Act by obtaining any necessary permits.
Wild & Scenic Rivers	X			Not Present
Wilderness Study Area	X			The proposed action is located within or adjacent to any WSAs. The Met #6 and Met #7 are located in close proximity (3,700 ad 3,900 feet, respectively) from the boundary of Wee Thump Joshua Tree Wilderness. Wilderness is managed to preserve wilderness characteristics. No buffers are created around wilderness. While the potential exists that structures may be seen by visitors within the Wilderness.

				However, due to the distance of the structures from the boundary and their height (120 feet and 400 feet) it is unlikely that any impacts to visitors experience with the Wilderness would occur.
Greenhouse Gas Emission		**X**		Currently there are no emission limits for so-called Greenhouse Gas (GHG) emissions, and no technically defensible methodology for predicting potential climate changes from GHG emissions. However, there are, and will continue to be, several efforts to address GHG emissions from federal activities, including BLM authorized uses.
Fish and Wildlife (Excluding Federally Listed Species)			X	See EA language below.
Fuels/Fire Management		X		Follow fire restrictions as stated in annual fire restrictions order.
Geology/Mineral Resources/Energy Production	X			There are no mining claims and no pending or authorized mining operations (either Notice or Plan level) in these sections.
Hydrologic Condition (Water Flow)		X		The proposed action may alter surface water flows through disturbance of the site. Areas of temporary disturbance should be restored to native landscape.
Lands/Access	X			There are no land issues for this project.

Livestock Grazing	X			Proposed action does not occur in an authorized grazing allotment.
Paleontological Resources	X			No paleontological issues at either proposed tower location.
Recreation		X		No impacts as long as the new routes are kept to a minimum and closed off at the end of the project.
Soci-economic Resources		X		This project will not adversely nor beneficially impact social or economic values. Since this would be a relatively short-term project with a small labor force, there would be little or no increase in economic benefits to the community.
Soils		X		These actions have the potential to disturb at least 200 square feet of native soils through grading. BMP's should be implemented to minimize impacts beyond the Sodar site itself.
Woodland/Forestry		X		Cactus and yucca may be present within the project impact area. Cactus and yucca are considered government property and are regulated under the Nevada BLM forestry program.
Vegetation Excluding Federally Listed Species	X			There is no known occurrences of BLM sensitive species within the area. If there are unknown occurrences of BLM sensitive species within the project site, due to the small amount of disturbance,

				potential impacts would be negligible.
Visual Resources			X	Proposed project not consistent with VRM Class II objectives.
Wild Horses and Burros	X			Proposed action does not occur in an active herd management area.

Wildlife

The proposed project area supports and is adjacent to lands that support wildlife characteristic of the Mojave Desert. Biological diversity varies according to topography, plant community, and proximity to water, soil type, and season.

Several common species of reptiles that may be present in the vicinity of the proposed project site may include the western whip-tail (Cnemidophorous tigris), desert iguana (Dipsosaurus dorsalis), side-blotched lizard (Uta stansburniana), zebra-tail lizard (Callisaurus draconoides), desert tortoise (Gopherus agassizii), western shovel-nosed snake (Chionactis occipitalis) and garter snake (Thamnophis sp.).

Common bird species that may be present in the vicinity of the proposed project site may include the rock wren (Salpinctes obsoletus), black-throated sparrow (Amphispiza quinquestriata), turkey vulture (Cathartes aura), common raven (Corvus corax), phainopepla (Phainopepla nitens), red-tailed hawk (Buteo jamaicensis), and western burrowing owl (Athene cunicularia hypugea).

Common mammal species include the black-tailed hare (Lepus californicus), the desert cottontail (Sylvilagus audubonii), coyote (Canis latrans), badger (Taxidea taxus), kit fox (Vulpes macrotis) and many species of rodents.

BLM Sensitive Wildlife Species

BLM sensitive species are species that require special management consideration to avoid potential future listing under ESA and that have been identified in accordance with procedures set forth in BLM Manual 6840. The following sensitive species are known to potentially occur within the parcel: western burrowing owl, western chuckwalla and banded gila monster.

Western burrowing owl (Athene cuniculari hypugaea)

The Western burrowing owl is a diurnal bird of prey specialized for grassland and shrubsteppe habitats in western North America. The owls are widely distributed throughout the Americas and can be found from central Alberta, Canada to Tierra del Fuego in South America. Burrowing owl habitat typically consists of open, dry, treeless areas on plains, prairies, and desert floors. Burrowing owls most frequently use mammal burrows created by other animals such as prairie dogs (Cynomys spp.), ground squirrels (Spermophilus spp.), coyotes (Canis latrans) or desert tortoises (Gopherus agassizii). The burrows are used for nesting, roosting, cover, and caching prey. In recent decades, the range and species count have been declining primarily due to agricultural, industrial, and urban development that reduce burrow availability.

Western chuckwalla (Sauromalus obesus)

The western chuckwalla is a BLM sensitive species that is found throughout the deserts of the southwestern United States and northern Mexico. Chuckwallas inhabit rocky outcrops where cover is available between boulders or in rock crevices, typically on slopes and open flats below 5,000 feet. Typical habitat includes rocky hillsides and talus slopes, boulder piles, lava bed, or other clusters of rock, usually in association Mojave Desert Shrub vegetation. This species requires shady, well-drained soils for nests. The chuckwalla is a widespread species, but is regionally limited by its requirement for rock outcrops. Chuckwallas likely occur within the project area, but would be localized on rock outcroppings.

Banded Gila monster (Heloderma suspectum)

The Gila monster is a large, heavy-bodied lizard with a massive head, a short thick tail, and short limbs with strong claws. It has flamboyant dorsal coloration of black and pink, orange, or yellow and occasionally exceeds 50 centimeters (19.7 inches) in total length. The Gila monster's range includes extreme southwestern Utah, southern Nevada, and adjacent southeastern California south through southern Arizona, southwestern New Mexico, and much of Sonora to Sinaloa, Mexico. Its habitat includes Mojave and Sonoran desert scrub, desert grassland, thorn scrub, and occasionally pine-oak woodland. Threats to this reptile include illegal collection, traffic fatalities, and most severe is habitat destruction from urban and agricultural development.

Migratory Birds

Under the Migratory Bird Treaty Act of 1918 (MBTA) and subsequent amendments (16 U.S.C. 703-711), it is unlawful to take, kill, or possess migratory birds. Numerous bird species travel through Nevada during spring and fall migrations. A list of the protected bird species can be found in 50 C.F.R. §10.13. The list of birds protected under this regulation is extensive and the project site has potential to support many of these species, including the BLM sensitive species the western burrowing owl (Athene cunicularia). Typically, the breeding season is when these species are most sensitive to disturbance, which generally occurs from March 1st through August 1st.

Threatened, Endangered Species

Threatened and endangered species are placed on a federal list by the U. S. Fish and Wildlife Service (USFWS) and receive protection under the Endangered Species Act of 1973 (ESA), as amended. The only T species known to occur in the vicinity of the project area is the threatened desert tortoise (Gopherus agassizii). In the Mojave region, the desert tortoise occurs primarily on flats and bajadas with soils ranging from sand to sandy-gravel characterized by scattered shrubs and abundant inter-shrub space for herbaceous plant growth. They are also found on rocky terrain and slopes. Historical survey data indicates that the area surrounding the project site is low density tortoise habitat.

Vegetation and Forestry

Cactus and yucca are an important component of creosote bursage and blackbrush vegetation types. Because of the thermal cover and forage they provide, cactus and yucca are important habitat component for the desert tortoise. Cactus and yucca are extremely slow growing and slow to reproduce. The USGS Southwest Regional Gap Analysis Project (SWReGAP) data indicates the proposed action is located within the Mojave mid-elevation mixed desert scrub community. Codominant cactus and yucca species for this community are buckhorn cholla (*Cylindropuntia acanthocarpa*), Joshua tree (*Yucca brevifolia*), or Mojave yucca (*Yucca schidigera*). These species, as well as others, may be present within the project site.

Visual Resources

The proposed project consist of the relocation of two anemometer towers ALT NV-06 and ALT NV–7, that were previously approved by BLM in NEPA project NEPA LV 2007–249. The amendment also includes a change in tower height for ALT NV-06, from 60–meters to 120–meters (394 feet) and the addition of sodar units at each tower site. ALT NV–7 will be a 60 meter tall anemometer tower. The ALT NV-06 anemometer tower must conform to FAA requirements (refer to FAA obstruction notice letter) for airway obstruction, which include light and marking requirements.

The Oak Creek Energy anemometer project amendment is located in Piute Valley, which is approximately 15 miles west of the town of Searchlight Nevada. The proposed project amendments are located in Visual Resource Management (VRM) Class II area as identified in the Las Vegas Resource Management Plan, signed October 1998. The Class II VRM Objective:

> Is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

The project area landscape is panoramic and is bordered by the McCullough Mountain Range to the northwest, the Highland Range to the northeast, and the New York Mountains to the south. The project area is also boarded by the South McCullough Mountain Wilderness Area and the Wee Thump Joshua Tree Wilderness towards the north. The Piute/Eldorado ACEC partially encloses the area. The mountains are typical basin and range type. The project area is heavily vegetated. The basin area is mostly a dense yucca forest with a sage brush understory. The mountain vegetation is typical piñon-juniper.

The existing structures in the area include State Route 164 (SR-164), the New York Mountains Communications Site, the Crescent Peak reflector dish and Oak Creek Anemometer site, a 500KV transmission line in Piute Valley.

The nearest population area to this project is the Town of Searchlight, Nevada, which is approximately 13 miles away between the two projects. The major access road is SR-164; which is a gateway road for travelers from CA driving out to the Lake Mojave, to Arizona, or points along the way.

The primary user activities in this area consist of hunting, mining, and casual use OHV activities.

Figure 1. View from State Route 164 at about mile marker 15.

KOP-1 SR-164 near mile marker 9. This picture is a view of the alternative site 7 tower location from SR-164, approximately ½ mile from the proposed site. The land forms are dominated by flat rolling landscape in the foreground and rolling symmetrical hills in the background. The landscape has horizontal lines in the foreground, moving to curvilinear and undulating as you move to the mid-ground to the background respectively. The landscape colors are generally dark to light in the foreground and middle ground, becoming monotone in the background. The texture of the landscape is medium and discontinuous in the foreground. As move to the foreground it becomes more uniform and ordered to coarse in the background.

The area is dominated by a Joshua Trees Yucca brevifolia which add tall rough jagged features to the overall vegetation landscape. The Joshua trees are dominant in the foreground and mid-ground. The understory consists of creosote-bursage scrub and Mojave mixed scrub, and blackbrush. There is a distinct horizontal layering of the vegetation in the foreground and mid-ground. The vegetation is dominated by distinct yellow greens and browns in the foreground and blacks and grays in the background. The vegetation texture is uniformly coarse and dense.

State Route 164 (figure 1) is the dominant structure in foreground. In the mid-ground there is a telephone line, visible on the left third of figure two. Depending on the direction of travel on SR-164 there is also the New York Mountains communications site, which dominates the foreground view. SR-164 is a dominant bold line in the foreground. The telephone line is indistinct in the middle and back ground locations. SR-164 adds shades of gray to black to the foreground. The telephone line is indistinct for color in the background. SR-164 is fine and directional in texture. The New York Mountains communication site is coarse and stippled in texture.

Figure 2. View from SR-164 of KOP 1

KOP-2 is on RS-2477 Road A68II, approximately ½ mile from the proposed site. KOP-2 is located near the southeast end of the McCullough Mountain Range outside of the designated wilderness area for the McCullough's, and northwest of the Wee Thump Joshua Tree Wilderness area.

The landscape is panoramic with the McCullough Mountain range dominating the view. The landform is irregular and discontinuous in the foreground. The mid-ground landform is rolling and irregular. The back ground mountains are pyramidal. The land form has an irregular line, that is curving and sometimes perpendicular in the foreground. The background land form has smooth angular lines. The land form colors are indistinct in color due to vegetative cover, otherwise the

land form is black to brown in value. The texture of the landform is patchy and directional in the foreground. The background landform is coarse or rough .

The vegetation in KOP-2 starts the end of the Joshua Tree Yucca brevifolia forest and marks the beginning of the Pinyon-juniper forest with an understory of black brush, yucca, and Mormon tea. The vegetation is irregular and discontinuous with respect to the Pinyon-juniper and the understory. The background vegetation is coarse. The line of the vegetation is jagged and irregular in the foreground, while the background is more angular and complex. The vegetation color is dominated by grayish greens and yellows of the Yucca's and greys and blacks of the black brush.

The existing structures consist of an RS-2477 two track dirt road (A68II) in the foreground and the McCullough Mountain communication site in the background, which is a passive reflector dish (PRD). The McCullough site also includes an anemometer tower owned by Oak Creek Energy (OCES Tower #12) that was approved under this case number N-082729. The road is tan colored and curvilinear feature in the foreground. The PRD and the anemometer tower introduce angular and vertical structures in the background respectively. The PRD is silver to black in color depending on the viewing angle. Both structures are fine in texture in the foreground and background.

Figure 3. location picture of Alt-6.

KOP-3 is located on SR-164 approximately three miles west of the Town of Searchlight, Nevada. This KOP addresses both sites and represents the view from the town of Searchlight, Nevada.

Environmental Effects:

The critical elements that are considered for this environmental assessment (EA) have been analyzed in the August 2008 EA completed for the initial plan of wind assessment for 12 met towers. This analysis is hereby incorporated by reference in an effort to focus on the specific issues presented by the proposed action and alternatives discussed in Chapter 2 of this document.

Wildlife

Wildlife species in the general area include small mammals, rodents, birds and reptiles. These species would be displaced as lands are disturbed within the project area. The primary direct impacts of the proposed action on wildlife would be killing or maiming of ground dwelling animals and less mobile species (such as reptiles) during construction, displacement of individuals, the loss and fragmentation of habitat and increased potential for illegal kills and harassments of wildlife. Additional impacts associated with the mortality from vehicular traffic may also occur during subsequent use of the project area. Wildlife species in the general area are common and widely distributed throughout the area and the loss of some individuals and/or their habitat would have a negligible impact on populations of the species throughout the region.

Wildlife Mitigation

Guy wires and new towers present a collision risk to birds and bats. To reduce risk of collision the proponent must comply with the following:

1. -Guy wires will be marked with reflective devices, or another device, placed at least every 30 feet along the length of the wires to increase visibility for birds.

2. - Birds and bats seem to be drawn to certain types of lights during inclement weather causing increased risk for collision into towers. To reduce risk, white (best) or red strobe lights should be used in the minimum number possible, minimum intensity and minimum number of flashes per minute allowable by FAA.

BLM Sensitive Wildlife Species

Western burrowing owl (Athene cuniculari hypugaea)

The direct impacts of the proposed action on western burrowing owl would be loss of nesting habitat and forage, mortality and harassment of individual animals, and decrease in habitat value of adjacent remaining “wildland” areas due to increased human activity in the area. The species is protected by the Migratory Bird Treaty Act and the proponent will be required to adhere to migratory bird mitigation measures.

Western chuckwalla (Sauromalus obesus)& Banded Gila monster (Heloderma suspectum)

The direct impacts of the proposed action on western chuckwalla and Banded Gila monster would be loss of habitat, mortality and harassment of individual animals if they wander into the area of activity, and decrease in habitat value of adjacent remaining “wildland” areas due to increased human activity in the area.

Migratory Birds

Migratory birds, including the BLM sensitive species the western burrowing owl (Athene cunicularia), may be present on the project site. Depending on the time of year for construction, there is the potential to disturb nesting birds within or immediately adjacent to the proposed action.

Migratory Birds Mitigation

1. To prevent undue harm, habitat-altering projects or portions of projects should be scheduled outside bird breeding season. In upland desert habitats and ephemeral washes containing upland species, the season generally occurs between March 1st and August 1st

2. If a project that may alter any breeding habitat has to occur during the breeding season, then a qualified biologist must survey the area for nests prior to commencement of construction activities. This shall include burrowing and ground nesting species in addition to those nesting in vegetation. If any active nests (containing eggs or young) are found, an appropriately-sized buffer area must be avoided until the young birds fledge.

Threatened, Endangered Species

This project will disturb a total of 0.12 acres of tortoise and it is adjacent to undisturbed, contiguous habitat wherein potential corridors for tortoise entry exist. Since tortoise sign has been found in the vicinity and undisturbed habitat exists in the area, there is potential for tortoises to wander into the project area. If not noticed and avoided during construction, desert tortoises could be either injured or killed (by crushing) or harassed (by being moved out of harm's way).

Section 7 Consultation for this project is covered under the Programmatic Biological Opinion for Multiple Use Activities (1-5-97-F-251) contingent on compliance with the terms and conditions for Area C. Minimization measures in the above biological opinion contain measures to reduce potential impacts to desert tortoise.

Threatened, Endangered Species Mitigation

1. The proponent is required to have an authorized biologist monitor routes that do not follow existing roads to prevent crushing of tortoises and burrows. Specifically, the authorized biologist will walk in front of vehicles while travelling over undisturbed habitat.

2. The authorized biologist will survey areas prior to surface disturbance wherein vegetation will be removed and remain onsite during construction/installation operations.

3. The proponent or the contract biologist must receive approval from the Fish and Wildlife Service prior to start of construction activities. The Fish and Wildlife Service has 30 days to respond once request to approve tortoise biologist is received.

Vegetation

Cactus and yucca may be present within the project impact area. Cactus and yucca are considered government property and are regulated under the Nevada BLM forestry program.

Vegetation Mitigation Measure:

If unable to be avoided, all cactus and yucca within permanent and temporary impact areas must be salvaged and replanted in temporary impact areas or undisturbed portions of the project area. Unless otherwise directed by the BLM botanist, all replanted cactus and yucca must be

watered and otherwise maintained for a period of one year. To ensure successful salvage and transplant, all cactus and yucca must be salvaged using a contractor (approved by the BLM botanist) with at least three years experience salvaging and maintaining plant materials in the Mojave or Sonoran Deserts.

Visual Resource Managment

The proposed project is located in a VRM Class II management objective area. The FAA Advisory Circular, 70/7460–1 K Change 2, Obstruction Marking and Lights, a medium-dual lighting system for the proposed 120–meter (394 feet) tower requires that the structure comply with following requirements:

- This dual lighting system includes red lights (L-864) for nighttime and medium intensity flashing white lights (L-865) for daytime and twilight use (Page 23).
- a. Aviation Red Obstruction Lights. Use flashing beacons and/or steady burning lights during nighttime (Page 9).
- b. Medium Intensity Flashing White Obstruction Lights. Medium intensity flashing white obstruction lights may be used during daytime and twilight with automatically selected reduced intensity for nighttime operation. When this system is used on structures 500 feet (153m) AGL or less in height, other methods of marking and lighting the structure may be omitted (Page 9).
- The proposed structure has minimum candela requirements for night, day, and twilight lighting from the FAA listed in table 5 below.

Distance/Intensity Table

Time Period	*Meteorological Visibility Statute Miles*	*Distance Statute Miles*	*Intensity Candelas*
Night		**2.9 (4.7km)**	**1,500 (+/- 25%)**
	3 (4.8km)	**3.1 (4.9km)**	**2,000 (+/- 25%)**
		1.4 (2.2km)	**32**
Day		**1.5 (2.4km)**	**200,000**
	1 (1.6km)	**1.4 (2.2km)**	**100,000**
		1.0 (1.6km)	**20,000 (+/- 25%)**
Day		**3.0 (4.8km)**	**200,000**
	3 (4.8km)	**2.7 (4.3km)**	**100,000**
		1.8 (2.9km)	**20,000 (+/- 25%)**
Twilight	**1 (1.6km)**	**1.0 (1.6km) to 1.5 (2.4km)**	**20,000 (+/- 25%)?**
Twilight	**3 (4.8km)**	**1.8 (2.9km) to 4.2 (6.7km)**	**20,000 (+/- 25%)?**

Note-
1. DISTANCE CALCULATED FOR NORTH SKY ILLUMINANCE.

TBL 5

Distance/Intensity Table 5

Visual Resource Management Alternative A

The proposed action of the 120–meter (394 feet) tower and the FAA marking and lighting requirements conflicts with the Class II objectives, which the level of change should be low. The management activities, the proposed tower, can be seen but should not attract the attention of the casual observer. Any changes in the landscape, the tower, must repeat the basic elements of form, line, color and texture found in the predominant landscape.

The proposed tower and the FAA requirements will attract the attention of the casual observer because of the height and the marking requirements required by the FAA. Under the current management activities, the approval of the proposed 120–meter (394 feet) tower is not consistent with the approval of towers less than 200 feet tall in the Eldorado/Piute Valley ACEC. Previously approved ROW applications for met towers, in and around the Eldorado/Piute Valley area were less than 200 feet in height. Their is no way to mitigate the lighting and marking requirements required by the FAA. The proposed 120–meter (394 feet) tower does not repeat form, line, color, and texture in the context that the existing approved towers are less than 200 feet in height.

Visual Resource Management Alternative B

The proposed towers would be 60–meters in height and would not have to comply with FAA lighting requirements. Aerial marking (Johnny balls) would still be required per the Best Management Practices identified by the BLM in the FEIS on Wind Energy Development on BLM Administered Lands in the Western United States, signed December 2005. The towers would be consistent with the other towers in the Eldorado/Piute Valley area, but would not draw the attention of the casual observer that flashing lights would on a 120–meter tower.

The sodar units would propose a visual obstruction depending on the colors of the unit. The fencing and related fencing material

Visual Resource Management Alternative C No Action Alternative

The original tower locations and heights would remain the same and there would be no change to the impacts to the visual resources.

Visual Resource Management Mitigation

Alternative A

- In order to reduce the wildlife attraction and mortality caused by flashing lights and the conflict with VRM class II management requirements with flashing lights; the proponent must use a Audio/Visual Warning System (AVWS) approved by the FAA that keeps flashing lights in a passive mode until the aircraft are detected within range of the automated radar detection system.

- The area disturbed by installation of meteorological towers (i.e., footprint) shall be kept to a minimum.

- Existing roads shall be used to the maximum extent feasible. If new roads are necessary, they shall be designed and constructed to the appropriate standard.

- Meteorological towers shall not be located in sensitive habitats or in areas where ecological resources known to be sensitive to human activities (e.g., prairie grouse) are present.

Installation of towers shall be scheduled to avoid disruption of wildlife reproductive activities or other important behaviors.

- Meteorological towers installed for site monitoring and testing shall be inspected periodically for structural integrity.
- The sodar units will be painted according to the BLM Standard Environmental Colors chart dated June 2008.
- All fencing will be built using non-specular material.

Alternative B

- The area disturbed by installation of meteorological towers (i.e., footprint) shall be kept to a minimum.
- Existing roads shall be used to the maximum extent feasible. If new roads are necessary, they shall be designed and constructed to the appropriate standard.
- Meteorological towers shall not be located in sensitive habitats or in areas where ecological resources known to be sensitive to human activities (e.g., prairie grouse) are present. Installation of towers shall be scheduled to avoid disruption of wildlife reproductive activities or other important behaviors.
- Meteorological towers installed for site monitoring and testing shall be inspected periodically for structural integrity.
- The sodar units will be painted according to the BLM Standard Environmental Colors chart dated June 2008.
- All fencing will use non-specular material.

Client Proposed Mitigation Measures

Measures to reduce or avoid the potential adverse environmental effects of the project have been identified through project reviews and scoping by the BLM, the project applicant and their land management consultants. The Plan of Development outlines the methods and means for the installation of the guy-wired and non-guy-wired types of towers and the equipment required to conduct an environmentally sound and safe field operations.

Two types of mitigation measures are discussed in this document:

(1) mitigation measures incorporated by project design (see Revised POD); and

(2) additional mitigation measures recommended by BLM staff.

Note: Most of the mitigation measures, identified through the preliminary analysis process, have been voluntarily incorporated by the project applicant OCES into the Revised POD. The effectiveness of these mitigation measures incorporated by project design is taken into account in the impact evaluation. For example, avoidance of Joshua trees, pinion/juniper trees and other vegetation has been conducted by the applicant during pre-project tower siting and site selection.

Flaggings and other marking methods alert the installation crew and contractor on where to access the site and place the met tower in order to avoid damage to existing vegetation.

The analysis in this EA, will be limited to the relocated sites (ALT Met #6 & #7). A circle with a 350' radius and a circle with a 500' radius were field surveyed for ALT Met #6 & #7, respectively. Site-specific biological and cultural resources field surveys have been completed in December 2009 and indicated a negative presence of any cultural resources. Biological reports also indicated that these sites are not within any special management habitat and the impacts of the relocated sites are within the scope of the analysis if the standard biological mitigation measures from the August 2008 EA.

All mitigation measures, stipulations and terms outlined in the February 2009 ROW Grant N-82729, will be incorporated into this EA by reference and remain in full force and effect. In addition to the conditions outlined in Grant N-82729, the following mitigations will be incorporated into the project operations. All efforts will be taken to minimize impacts to the land and resources by utilizing only the tools necessary to access the site and install the met towers in a safe and environmentally-sound manner.

c. Sodar units will be fenced. The sodar units shall be dark brown in color with a sign posted on the fence that identifies the BLM case file number and the proponent phone number.

FAA Mitigation

1. Orange balls will be attached 30' down from the top of the mast and 15' up from the ground to increase the visibility of the towers and wires.

2. The structure is marked and or lighted in accordance FAA Advisory circular 70/7460–1 K Change 2, Obstruction Marking and Lighting, a med-dual system-Chapter 4,8 (M-Dual), &12.

> Any temporary or permanent structure, including all appurtenances, that exceeds an overall height of 200 ' (61m) above ground level (AGL) or exceeds any obstruction standard contained in 14 CFR subpart 77, should normally be marked and/or lighted. However, an FAA aeronautical study may reveal that the absence of marking and/or lighting will not impair aviation safety. Conversely, the object may present such an extraordinary hazard potential that higher standards may be recommended for increased conspicuity to ensure safety to air navigation. Normally outside commercial lighting is not considered sufficient reason to omit recommended marking and/or lighting. Recommendations on marking and/or lighting structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structures and overall layout of design. The FAA may also recommend marking and/or lighting a structure that does not exceed 200 ' (61m) AGL (14 CFR subpart 77 standards). Subsection 53 of FAA Advisory Circular AC70/7460-1K provides additional guidance regarding certain tower heights and lighting requirements. The FAA Form 7460-1 must be filed with the FAA for all structures over 200 ft. to determine if the tower is allowed and lighting is required.

Wildlife Mitigation

1. Bird diverters will be installed approximately every 30' along each guy tire to avoid and minimize the potential for bird strike.

2. Each Sub-Contractor will receive a briefing and be required to sign a confirmation document of their understanding of the briefing on the desert tortoise as required by stipulation Number 20 of the ROW Grant N-82729.

3. Perch deterrents would be installed on the lateral anemometer arms to prevent raptors and other birds from gaining perch in tortoise habitat areas.

4. The Desert Tortoise is an Endangered Species within the United States. Caution must be taken not to harass, hurt or disturb the tortoise. If harassment, injury or death occurs, a fine up to $50,000 and imprisonment of up to one (1) year may result. Always beware of tortoises in the roads, under parked vehicles or entering a site you may be using. The area of disturbance shall be confined to the smallest practical area, considering topography, placement of facilities, location of burrows, public health and safety, and other limiting factors. Work area boundaries shall be delimited with flagging or other marking to minimize surface disturbance associated with vehicle straying.

5. All trash and food items shall be promptly contained within closed, raven-proof containers. These containers shall be regularly removed from the project site to reduce the attractiveness of the area to ravens and other tortoise predators.

6. To the extent that is possible, ground disturbing activities associated with the proposed action should be scheduled during a time of year when the temperatures are cooler and desert tortoises are more likely to remain in their burrows, generally between November 1st of one year and March 1st of the following spring.

7. Should a tortoise wander into the work area, all activity must stop. The Las Vegas Field Manager (LVFM) shall be notified within 24 hours that a tortoise did enter the site.

8. Upon locating a dead or injured tortoise, the Holder is to notify the LVFM immediately. The information provided must include the date and time of the finding or incident (if known), location of the carcass or injured animal, a photograph, cause of death, if known and other pertinent information. Any dead tortoises encountered must be left in place and BLM notified. No relocation of live or dead tortoises around the project site is permitted under Federal law.

9. Workers shall inspect for tortoises under all vehicles prior to moving them. If a tortoise is present, the worker shall carefully move the vehicle only when necessary and when the tortoise would not be injured by moving the vehicle or shall wait for the tortoise to move out from under the vehicle.

10. Pets should be restrained either by enclosure in a kennel or by chaining to a point within the project site.

Construction Mitigation Measures

1. All Joshua trees and Yucca stands will be avoided and all tracks will be raked when a vehicle-mounted backhoe would typically be used to excavate holes for placement of the

tower structures within each tower structure work area. Any holes left temporarily open or unguarded will be surrounded with high-visibility plastic mesh.

2. Where concrete/cement is required, no washout shall take place on public lands. The excavated soil will be replaced in the same order it was removed, thereby salvaging the seed bank.

3. Foundations and trenches shall be backfilled with originally excavated material as much as possible. Excess excavation materials shall be disposed of only in approved areas or, if suitable, stockpiled for use in reclamation activities.

4. Efforts shall be taken to minimize impacts to vegetation during all phases of activities within the right-of-way. This includes pre-disturbance surveys to identify vegetation suitable for salvage and to ensure that protected or sensitive plant species are properly protected.

5. Topsoil will be stockpiled and utilized in post construction reclamation efforts.

6. Weed Control measures will be utilized on all disturbed areas within the ROW and the temporary work areas.

7. Efforts shall be taken to preserve surface and subsurface cultural and paleontological resources that may be encountered: Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the OCES, or any person working on his behalf, on public or Federal land shall be immediately reported to the Las Vegas Field Office (LVFO). OCES shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the LVFO. An evaluation of the discovery will be made by the LVFO to determine appropriate actions to prevent the loss of significant cultural or scientific values

8. Efforts shall be taken to minimize impacts to wildlife during all phases of the project.

9. Efforts shall be taken to avoid impacts to migratory bird's nests during the appropriate breeding season. The following measures describe the most effective measures to avoid impacts: To prevent undue harm, habitat-altering projects or portions of projects should be scheduled outside bird breeding season. In upland desert habitats and ephemeral washes containing upland species, the season generally occurs between March 15th and July 30th If a project that may alter any breeding habitat has to occur during the breeding season, then a qualified biologist must survey the area for nests prior to the commencement of construction activities. This shall include burrowing and ground nesting species in addition to those nesting in vegetation. If any active nests are found the area must be avoided until the young birds fledge.

10. Should hazardous materials be spilled or deposited within the ROW areas by OCES, its agents, or a third party responsible to OCES, the LVFO's Authorized Officer shall be notified immediately. Any clean up or reporting requirements shall be completed in compliance with all applicable State and Federal laws and regulations.

11. OCES will be in compliance with Federal and State air and water quality laws.

MITIGATION STATEMENTS

All operations will be conducted as outlined and approved in the EA, POD, and the ROW grant. The area from the met tower to the access road that has been disturbed will be hand raked to remove all sign of tire tracks. The berm of the road will be re-established to maintain original drainage pattern while minimizing other users from going off road at these entry points. Additionally, available natural ground debris will be scattered within the first 25 ’ from the access point across the fresh raked areas. Since access to remove the towers at a later date is required, large barriers will not be placed in these areas unless required by the BLM during decommissioning of the site

Summary of Cumulative Impacts

The cumulative impact study area includes the Federal lands adjacent to the proposed meteorological towers ROW and private lands located near the town of Searchlight, Nevada.

Because many of the reasonably, foreseeable future projects are in the early stages of development, there is insufficient information to fully understand the project's potential impacts. However, a general assumption can be made based on impacts that normally occur with the types of projects listed in Table 5-1.

A. Vegetation and Wildlife Resources

Cumulative effects to vegetation and wildlife resources, including threatened, endangered, or candidate plant and wildlife species; migratory birds; noxious and invasive weeds; and forestry (cactus and yucca); are relative to the amount of impact in the cumulative analysis area and would be proportional to the amount of ground disturbance within the specific project area. In particular, the cumulative effect of several projects constructed in the same area, is likely to produce impacts that will vary to some extent depending upon proximity of additional modifications. Increasing numbers of utility projects and access roads in areas of wildlife habitat are an important consideration.

B. Visual Resources

Implementation of the cumulative effects along with past, present, and reasonably foreseeable actions, may have direct and long-term effects on visual resources. If developed according to the proposed action, the landscape characteristics would be changed. Development of additional meteorological towers and other renewable energy facilities, if approved and constructed, would modify the setting in the vicinity of the proposed project further degrading scenic quality and will impact the human environment.

Table 5-1 Reasonably Foreseeable Future Actions

Action	Description	Area Affected
Solar Energy Projects on BLM-administered lands	Development of utility scale solar projects: CACA-49005 (Boulevard Associates) N-83129 (Cogentrix Solar) N-83130 (Cogentrix Solar) N-85117 (Bull Frog Green Energy) N-85619 (Cogentrix Solar)	Six ROW applications have been filed for the development of solar projects within 20 miles of the proposed project site. Plans of Development are not available for review. One application is "second-in-line" applications for the same parcel.

	N-86158 (Power Partners Southwest)	
Wind Energy Projects on BLM administered lands	Development of utility scale wind projects CACA-48666 (Oak Creek Energy Systems Inc) N-84626 (Searchlight Wind) N-85746 (Desert Research Institute) N-86300 (Great Basin Wind Energy) N-88599 (White Oak Wind Energy) N-88600 (White Oak Wind Energy)	Six ROW applications have been filed for the development of wind projects within 20 miles of the proposed project site. Plans of Development are not available for review.
Non and Other Energy Facilities on BLM administered lands	Development of Roads, Communication Site, Temporary Use Permit (TUP), Unauthorized Use, Unauthorized Development, Unauthorized Occupancy, Unauthorized Act, Re-conveyed Road Water Facility, Oil & Gas Pipeline, and Power Transmission Lines N-48332 – (Wycal Pipeline Co.) O & G Pipeline N-51534 – (BLM) Unauthorized Development N-54052 – (BLM) Unauthorized Occupancy N-57607 – (BLM) Unauthorized Use	Twenty Six ROW applications have been filed for various projects within 20 miles of the proposed project site.

	N-58757 – (Gem Enterprises) Water Facility N-61640 - (Tommy Phelps) Unauthorized Act – Other N-82066 - (Coyote Springs) O & G Pipeline N-8206601 - (Coyote Springs) TUP for O& G Pipeline N-88949 – (American Towers Inc.) Communication Site N-89163 - (Nature Conservancy) Re-conveyed Road N-89164 - (Nature Conservancy) Re-conveyed Road N-51027 (Clark County) Trans Solid N-61806 (Western Area Power Administration) Power Transmission Line N-66296 (Dine Power Authority) Power Transmission Line N-83104 – (Rose Trust) Power Transmission Line CACA-25439 - (BLM) Multiple Use Management N-53307 - (Ernest Sandquist) Public Land Sale N-53307 - (BLM) Public Land Sale N-74970 – (BC Ventures, Inc.) Unauthorized Occupancy		

	N-82665 – (Stanley Pierce) Unauthorized Occupancy N-82666 – (Stanley Pierce) Unauthorized Occupancy N-80382 – (Cactus Gold Corp.) Unauthorized Development N-61634 – ((BLM) Unauthorized Development N-54503 – (Clark County) Unauthorized Development N-83547 – (BLM) Unauthorized Occupancy N-83606 – (BLM) Unauthorized Use	

Tribes, Individuals, Organizations, or Agencies Consulted:

Table 4. List of Persons, Agencies and Organizations Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Chris White and Donna ONeill	Federal Aviation Administration, 49 U.S. C., Section 44718 and if applicable Title 14 CFR, Part 77	Determination of No Hazard to Air Navigation
Enter Name		

List of Preparers

Table 5. List of Preparers

Name	Title	Responsible for the Following Section(s) of this Document
Mark Chandler	RECO, Realty Specialist	Land/Access/VRM
Susanne Rowe & Kathleen Sprowl	Archaeologist and Cultural Resource Specialist	Cultural Resources, Native American Religious Concern, Paleontology
Brenda Wilhight	RECO, Realty Specialist	Land/Access/VRM
Jayson|Barangan	Natural Resource Specialist	Fish & Wildlife, Migratory Birds, Threatened, Endangered or Candidate (ANIMAL Species)
Matt Amalong	Biologist – AMEC	Support/Consulting Member
Nathan Moorhatch	Biologist – AMEC.	Support/Consulting Member
Sonia Hutmacher	Archaeologist-AMEC.	Support/Consulting Member
Ahmed Mohsen	Project Management, NEPA Document Lead — Informed Decisions Environmental Solutions (IDES)	Support/Consulting Member
Michael T. Hogan	Realty/LLE, POD Document Lead — Solar Winds Environmental Technologies, Inc.	Support/Consulting Member